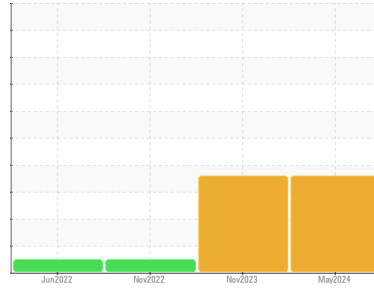


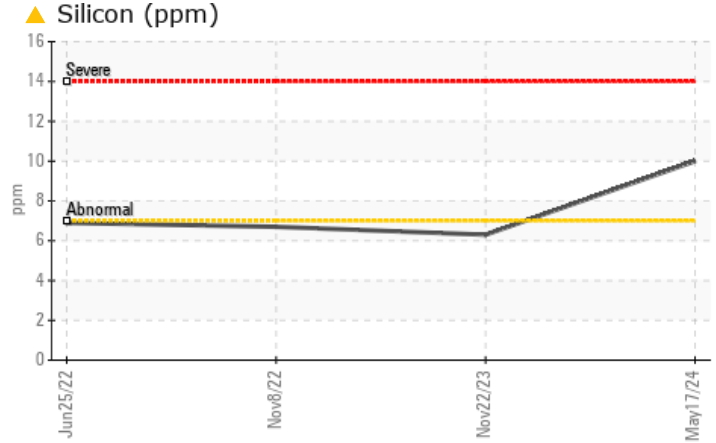
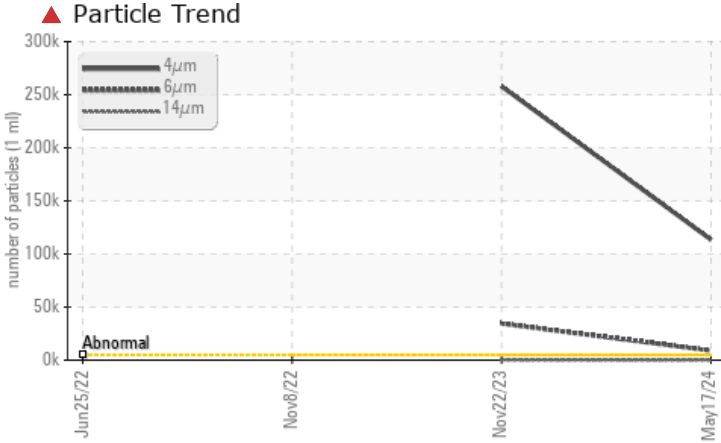
PROBLEM SUMMARY

Area
Vessel
Machine Id
KAT 06 (EMERGENCY FIRE PUMP)
Component
Bow Thruster
Fluid
NOT GIVEN (42 LTR)

Sample Rating Trend



COMPONENT CONDITION SUMMARY



RECOMMENDATION

Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	SEVERE	NORMAL
Silicon	ppm	ASTM D5185(m) >7	▲ 10	6	7
Particles >4µm		ASTM D7647 >5000	▲ 113456	▲ 257904	---
Particles >6µm		ASTM D7647 >1300	▲ 8913	▲ 34409	---
Oil Cleanliness		ISO 4406 (c) >19/17/14	▲ 24/20/12	▲ 25/22/14	---

Customer Id: KATSHESH
Sample No.: PC0080986
Lab Number: 02638282
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
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Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Resample	---	---	?	Resample in 30-45 days to monitor this situation.
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your next sample.
Check Breathers	---	---	?	The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

ISO



22 Nov 2023 Diag: Kevin Marson

Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report



NORMAL



08 Nov 2022 Diag: Kevin Marson

Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 2 test kits, this testkit includes Particle Count to determine the ISO cleanliness of the fluid. All component wear rates are normal. There is no indication of any contamination in the component (unconfirmed). Viscosity of sample indicates oil is within SAE 15W40 range, advise investigate. The condition of the oil is acceptable for the time in service.

view report



NORMAL



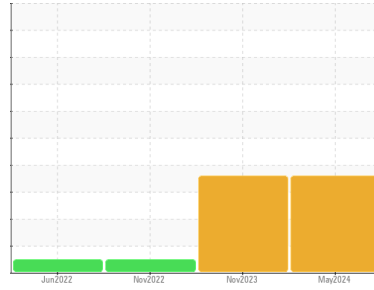
25 Jun 2022 Diag: Kevin Marson

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. Please provide more complete information on your next sample. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 2 test kits, this testkit includes Particle Count to determine the ISO cleanliness of the fluid. All component wear rates are normal. There is no indication of any contamination in the component (unconfirmed). Viscosity of sample indicates oil is within SAE 15W40 range, advise investigate. The condition of the oil is acceptable for the time in service.

view report



Area
Vessel
Machine Id
KAT 06 (EMERGENCY FIRE PUMP)
Component
Bow Thruster
Fluid
NOT GIVEN (42 LTR)



DIAGNOSIS

Recommendation
Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. Resample in 30-45 days to monitor this situation. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear
All component wear rates are normal.

Contamination
There is a high amount of silt (particulates < 14 microns in size) present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PC0080986	PC0080265	PC0032255
Sample Date	Client Info	17 May 2024	22 Nov 2023	08 Nov 2022
Machine Age	hrs	0	0	0
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		SEVERE	SEVERE	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >0.2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185(m) >90	3	5	4
Chromium	ppm ASTM D5185(m) >10	0	0	0
Nickel	ppm ASTM D5185(m) >10	0	<1	<1
Titanium	ppm ASTM D5185(m)	0	0	<1
Silver	ppm ASTM D5185(m)	0	<1	0
Aluminum	ppm ASTM D5185(m) >10	1	2	1
Lead	ppm ASTM D5185(m) >20	0	2	1
Copper	ppm ASTM D5185(m) >20	<1	4	2
Tin	ppm ASTM D5185(m) >15	0	<1	<1
Antimony	ppm ASTM D5185(m)	0	0	0
Vanadium	ppm ASTM D5185(m)	0	0	0
Beryllium	ppm ASTM D5185(m)	0	0	0
Cadmium	ppm ASTM D5185(m)	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m)	13	30	33
Barium	ppm ASTM D5185(m)	0	<1	0
Molybdenum	ppm ASTM D5185(m)	1	0	<1
Manganese	ppm ASTM D5185(m)	<1	0	<1
Magnesium	ppm ASTM D5185(m)	35	23	23
Calcium	ppm ASTM D5185(m)	4255	2403	2530
Phosphorus	ppm ASTM D5185(m)	875	871	995
Zinc	ppm ASTM D5185(m)	955	1026	1047
Sulfur	ppm ASTM D5185(m)	7172	3306	3740
Lithium	ppm ASTM D5185(m)	<1	<1	<1

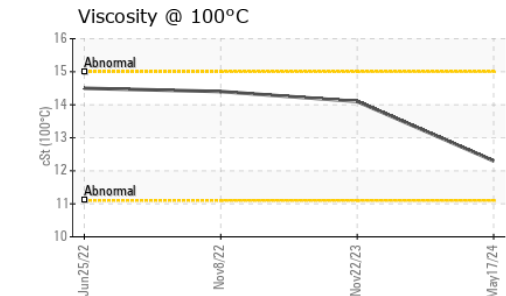
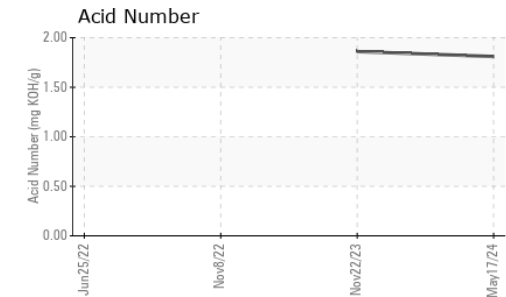
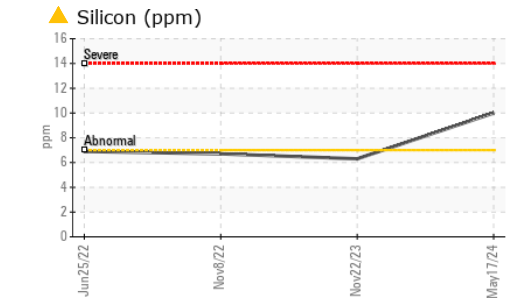
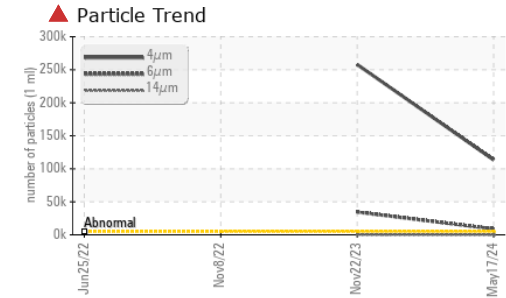
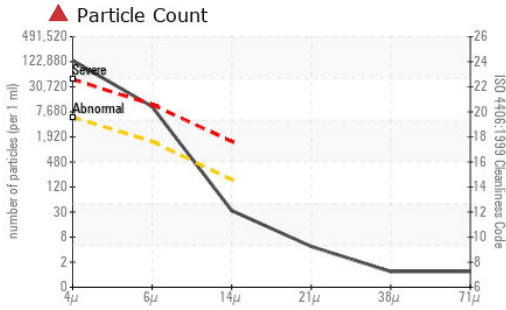
CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >7	▲ 10	6	7
Sodium	ppm ASTM D5185(m)	1	4	4
Potassium	ppm ASTM D5185(m) >20	1	5	4

FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	▲ 113456	▲ 257904	---
Particles >6µm	ASTM D7647 >1300	▲ 8913	▲ 34409	---
Particles >14µm	ASTM D7647 >160	29	90	---
Particles >21µm	ASTM D7647 >40	4	11	---
Particles >38µm	ASTM D7647 >10	1	2	---
Particles >71µm	ASTM D7647 >3	1	1	---
Oil Cleanliness	ISO 4406 (c) >19/17/14	▲ 24/20/12	▲ 25/22/14	---

OIL ANALYSIS REPORT

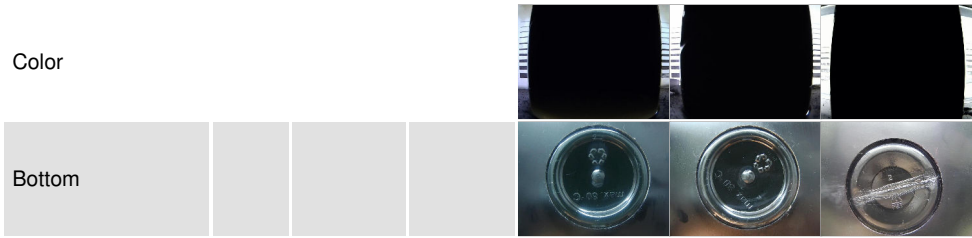


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		1.81	1.86	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)		106	106	110
Visc @ 100°C	cSt	ASTM D7279(m)		12.3	14.1	14.4
Viscosity Index (VI)	Scale	ASTM D2270*		107	134	133

SAMPLE IMAGES		method	limit/base	current	history1	history2
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Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0080986
Lab Number : **02638282**
Unique Number : 5787444
Test Package : IND 2 (Additional Tests: KV100, TAN Man, VI)

Ocean Choice International - Katsheshuk II
 1315 Topsail Rd, P.O. Box 8190
 St. John's, NL
 CA A1B 3N4
 Contact: Chief Engineer
 katengine@oceanchoice.com

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.